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EXAMINER	
SITTA, GRANT	

ART UNIT	PAPER NUMBER
2629	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/542,643	TAKATSUKA, TOSHINORI	
	Examiner	Art Unit	
	GRANT D. SITTA	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 May 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *19,21,23-26,33-35,37,38,43,44,46,47 and 49-70* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *19,21,23-26,33-35,37,38,43,44,46,47 and 49-70* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 July 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Response to Amendment

1. Acknowledgment is made of the amendment filed 5/22/2009, in which: claim 51 is amended; and newly added claims 68-70. Claims 19, 21, 23-26, 33-35, 37-38, 43-44,46-47 and 49-70 are currently pending an Office action on the merits follows.

2. Examiner notes in the last final Office Action the Examiner inadvertently stated claims 51-67 were rejected under 35 U.S.C. § 103 over Maataet, Hedayat. However, rejection of claims 52-62 was intended. Correction has been made to the corresponding claims.

3. Examiner notes in the last final Office Action the Examiner inadvertently labeled claim 62 as claim 63. Correction has been made to the corresponding claim.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 19, 23, 25-26 and 49/19, 49/23, 49/25, 49/26, and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maattaet et. al (US 6,762,748) hereinafter, Maattaet, in view of Laube et al (5,506,558) hereinafter, Laube

7. In regards to claim 19, Maattaet discloses the limitations of a ring-like magnet that is movably supported in a plane, and is magnetized; and

a plurality of magnetic sensors (fig. 3a (323, 322, 320, 321)) for detecting magnetic flux density produced by said ring-like magnet in a direction parallel to said plane are placed outside said ring-like magnet (fig. 3a and 3b),

wherein said magnetic sensors are disposed symmetrically from each other to said ring-like magnet (fig. 3a (323, 322, 320, 321) symmetric about the ring),

said magnetic sensors are positioned to detect variations in the magnetic flux density in the direction parallel to said plane(fig. 3a and 3b), the variations being caused by movement of said ring-like magnet in a direction parallel to said plane (fig. 3a and 3b (col. 5-6, lines 65-15).

Maattaet differs from the claimed invention in that Maattaet does not disclose said ring-like magnet comprises inner and outer ring sections of north and south magnetization along a radius of said ring-like magnet.

However, Laube teaches a system and method for a ring-like magnet comprises inner and outer ring sections of north and south magnetization along a radius of said ring-like magnet (fig. 8 col. 8, lines 40-67 of Laube).

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to modify Maattaet to include the use of ring-like magnet comprises inner and outer ring sections of north and south magnetization as taught by Laube in order to provide a more substantial magnetic field as stated in (col. 2, lines 38-60 of Laube).

8. In regards to claim 23, Maattaet as modified by Laube teaches wherein said magnetic sensors are magnetic sensors utilizing Hall effect, and the output signals are proportional to the magnetic flux density (col. 5, lines 40-67 Maattaet).

9. In regards to claim 25, Maattaet and Laube teaches further comprising an origin returning means for returning said ring-like magnet to the origin using magnetic force generated by said ring-like magnet (col. 9, lines 7-22 Maattaet).

10. In regards to claim 26 Maattaet as modified by Laube teaches wherein said magnetic sensors (fig. 3a and 3b (320) Maattaet) are disposed and faced to one of the outer ring sections of said ring-like magnet (fig. 8 col. 8, lines 40-67 of Laube).

11. In regards to claim 49/19, 49/23, 49/25, 49/26, see the rejection of claim 19. Also, with respect to the preamble claiming an electronic device incorporating the pointing device as claimed in any one of the above (see col. 9, lines 1-5 Maattaet wherein the

pointing device can be incorporated into a keyboard).

12. In regards to claim 50, Maattaet and Laube teaches wherein said ring-type magnet is magnetized at M sets of north-south poles, where M = K x I, K equals the number of magnetic sensors, and I is an integer equal to or greater than one (fig. 5b 520 and corresponding arrows it is magnetized at said points and then some. Maattaet and fig. 3a (310) and fig. 8 Laube). Maataet as modified by Laube satisfies the equation, i.e. Maattaet shows 4 sensors in fig. 3a, Laube shows 8 poles. In this example I would be equal to 2, which satisfies the claim language.

13. Claims 21, 24, 33, 34, 37, 38, 43-44, 46-47 and 49/24, 49/33, 49/34, 49/37, 49/38, 49/43, 49/46 and 49/47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maattaet and Laube, in view of Arita et. al (US 5,504,502) hereinafter, Arita.

14. In regards to claim 21, Maattaet and Laube disclose a printed circuit board (fig. 4a (416) Maattaet) and said ring-like magnet is movably supported in parallel to said printed circuit board (fig. 3a and 3b Maattaet) and said magnetic sensors are placed on said printed circuit board (fig. 3a and 3b Maattaet) and fig. 4a (416) Maattaet).

Maattaet and Laube differ from the claimed invention in that Maattaet and Laube do not disclose a printed circuit board on which a resin layer with elastic deformation is provided, wherein said ring-like magnet is fixed to said resin layer, ,

However, Arita teaches a system and method for a printed circuit board on which a resin layer with elastic deformation is provided, wherein said ring-like magnet is fixed to said resin layer, (fig. 1 (14) col. 4, lines 47-60 of Arita).

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to modify Maattaet and Laube to include the use of a printed circuit board on which a resin layer with elastic deformation is provided, wherein said ring-like magnet is fixed to said resin layer as taught by Arita in order to give a better feeling, or more human feeling, as stated in (col. 4, lines 50-60 of Arita), since such feeling would allow for a more comfortable user experience when interacting with a device.

15. In regards to claim 24, Maattaet and Laube fail to expressly disclose wherein said magnetic sensors are magnetic sensors utilizing magneto-resistive effect.

However, Arita teaches wherein said magnetic sensors are magnetic sensors utilizing magneto-resistive effect (col. 8, lines 40-50 magnetic reluctance element).

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to modify Maattaet and Laube to include the use of wherein said magnetic sensors are magnetic sensors utilizing magneto-resistive effect as taught by Arita in order to accurately detect the motion direction and distance as stated in (col. 2, lines 30-66 of Arita).

16. In regards to claim 33, Maattaet and Laube as modified by Arita teaches wherein said resin layer and said printed circuit board have their opposing faces not bonded to each other (fig. 9a (18) col. 7, lines 36-38 Arita).

17. In regards to claim 34 Maattaet and Laube as modified by Arita teaches wherein said resin layer is an elastic sheet (fig. 1 (11) col. 4, lines 51-53 Arita).

18. In regards to claim 37, Maattaet and Laube as modified by Arita teaches further comprising a switch on the resin layer side of said printed circuit board and at about the center of said ring-like magnet (fig. 19 (15) col. 8, lines 38-43 Arita).

19. In regards to claim 38, Maattaet and Laube as modified by Arita teaches comprising a projection (fig. 4a 402 projects from 420 Maattaet) for depressing said switch at a portion facing said switch on said resin layer (col. 4, lines 47-60 of Arita).

20. In regards to claim 43, Maattaet and Laube as modified by Arita teaches wherein said magnetic sensors utilizing the Hall effect are disposed (col. 5, lines 40-55 Maattaet) on the resin layer side (col. 4, lines 47-60 of Arita) of said printed circuit board to detect the magnetic flux density in a direction parallel to the surface of said printed circuit board (fig. 29, (14-1, 14-2) and fig. 10 (17) of Arita).

21. In regards to claim 44, Maattaet and Laube as modified by Arita teaches wherein said magnetic sensors utilizing the Hall effect are magnetic sensors with a single output terminal (col. 5, lines 53-65 Maattaet).

22. In regards to claim 46, Maattaet and Laube as modified by Arita teaches wherein said magnetic sensors utilizing the magneto-resistive effect are semiconductor magneto-resistive elements (col. 8, lines 40-50 magnetic reluctance element) which are disposed on the resin layer (col. 4, lines 50-60 Arita) side of said printed circuit board to detect the magnetic flux density in a direction parallel to the surface of said printed circuit board (fig. 29, (14-1, 14-2) and fig. 10 (17) Arita).

23. In regards to claim 47, Maattaet and Laube as modified by Arita teaches wherein said magnetic sensors utilizing the magneto-resistive effect (col. 8, lines 40-50 magnetic reluctance element Arita) are four semiconductor magneto-resistive elements disposed symmetrically on X and Y axes (fig. 3a and 3b (323,322,320 and 321) Maattaet), which are two axes on a two dimensional plane of an orthogonal system (fig. 3a and 3b (323,322,320 and 321) Maattaet), wherein two magnetic sensors on the X axis are electrically connected at a first connection point; and two magnetic sensors on the Y axis are electrically connected at a second connection point, and wherein said pointing device detects variations in ambient magnetic flux density caused by movement of said ring-like magnet (col. 6, lines 1-37 Maattaet) using electric signals at the first and second connection points (fig. 9a and fig. 9b col. 5, lines 40-50 Arita).

24. In regards to claims 49/24, 49/33, 49/34, 49/37, 49/38, 49/43, 49/46 and 49/47 see the rejection of claim 24. Also, with respect to the preamble claiming an eletronic device incorporating the pointing device as claimed in any one of the above (see col. 9, lines 1-5 Maattaet wherein the pointing device can be incorporated into a keyboard).

25. Claims 35 and 49/35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maattaet, Laube and Arita, in view of Matsuda et. al (US 5,541,370) hereinafter, Matsuda.

26. In regards to claim 35, Maattaet, Laube and Arita differs from the claimed invention in that Maattaet, Laube and Arita does not disclose wherein said resin layer is a silicone resin.

However, Matsuda teaches a system and method for wherein said resin layer is a silicone resin. (col. 12, lines 10-17 of Matsuda).

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to modify Maattaet, Laube and Arita to include the use of silicone resin as taught by Matsuda, since silicone resin is a durable widely used and easily obtained resin.

27. In regards to claim 49/35 see the rejection of claim 35. Also, with respect to the preamble claiming an eletronic device incorporating the pointing device as claimed in any one of the above (see col. 9, lines 1-5 Maattaet wherein the pointing device can be incorporated into a keyboard).

28. Claim 51 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maattaet, in view of Hedayat et. al (US 5,831,554) hereinafter, Hedayat.

29. In regards to claims 51, Maattaet discloses the limitations of a pointing device comprising:

a ring-like magnet that is movably supported in a plane (fig. 3a (300)), and is internally and externally magnetized ((fig. 5a circles showing flux) along said ring in said plane (fig. 3a and 3b); and

wherein said magnetic sensors are positioned to detect variations in the magnetic flux density in the direction parallel to said plane, the variations being caused by movement of said ring-like magnet (col. 5-6, lines 40-15).

Maattaet differs from the claimed invention in that Maattaet does not disclose wherein each of a plurality of magnetic sensors are positioned such that a distance from an intersection of a half way between an upper and lower surface of said ring-like magnet and a half-way point of said magnetic sensor is within a range from 0 to .75 mm in a vertical direction to said plane.

However, Hedayat teaches a system and method for a "plurality of slots formed in them to provide clearance for the sensor to reach inside the hollow ball and maintain a close and fixed proximity to the magnet" (col. 2, lines 33-67). Examiner notes the distance from a magnet and a sensor within 0 would be considered close.

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to modify Meaattaet to include the use of wherein each of a plurality of magnetic sensors are positioned such that a distance from an intersection of a half way between an upper and lower surface of said ring-like magnet and a half-way point of said magnetic sensor is within a range from 0 to .75 mm in a vertical direction to said plane as taught by Hedayat in order to maintain a close and fixed proximity as stated in (col. 2, lines 33-67) and since magnetic flux is more easily detected the closer a sensor is to the magnet.

30. Claims 52-54, and 56-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maattaet and Hedayat in view of Arita et. al (US 5,504,502) hereinafter, Arita.

31. In regards to claim 52, Maattaet and Hedayat fail to expressly disclose wherein said magnetic sensors are magnetic sensors utilizing magneto-resistive effect.

However, Arita teaches wherein said magnetic sensors are magnetic sensors utilizing magneto-resistive effect (col. 8, lines 40-50 magnetic reluctance element).

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to modify Maattaet and Hedayat to include the use of wherein said magnetic sensors are magnetic sensors utilizing magneto-resistive effect as taught by Arita in order to accurately detect the motion direction and distance as stated in (col. 2, lines 30-66 of Arita).

32. In regards to claim 53, Maattaet and Hedayat as modified by Arita teaches wherein said magnetic sensors utilizing the magneto-resistive effect (col. 8, lines 40-50 magnetic reluctance element Arita) are four semiconductor magneto-resistive elements disposed symmetrically on X and Y axes (fig. 3a and 3b (323,322,320 and 321) Maattaet), which are two axes on a two dimensional plane of an orthogonal system (fig. 3a and 3b (323,322,320 and 321) Maattaet), wherein two magnetic sensors on the X axis are electrically connected at a first connection point; and two magnetic sensors on the Y axis are electrically connected at a second connection point, and wherein said pointing device detects variations in ambient magnetic flux density caused by movement of said ring-like magnet (col. 6, lines 1-37 Maattaet) using electric signals at the first and second connection points (fig. 9a and fig. 9b col. 5, lines 40-50 Arita and col. 5, lines 40-67 Maattaet).

33. In regards to claim 54, Maattaet and Hedayat fail to disclose wherein said ring-like magnet is internally and externally unipolarly magnetized.

However, Arita discloses wherein said ring-like magnet is internally and externally unipolarly magnetized (see fig. 9a col. 6, lines 5-20).

Therefore, viewing the references as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to be motivated to incorporate the internally and externally unipolarly magnetized magnets of Arita into the input device of Maattaet, for the benefit of low power consumption and simple construction (Col. 6, lines 22-25 Arita).

34. In regards to claim 56, Maattaet and Hedayat as modified by Arita teaches wherein said magnetic sensors are disposed symmetrically on X and Y axes, which are two axes on a two dimensional plane of an orthogonal system, and said ring-like magnet is placed near said magnetic sensors (fig. 3b and lines extending out Maattaet).

35. In regards to claim 57, Maattaet and Hedayat as modified by Arita teaches wherein said magnetic sensors are magnetic sensors utilizing Hall effect, and the output signals are proportional to the magnetic flux density (col. 5, lines 40-67 Maattaet).

36. In regards to claim 58, Maattaet and Hedayat as modified by Arita teaches wherein said magnetic sensors utilizing the Hall effect are magnetic sensors with a single output terminal (col. 5, lines 53-65 Maattaet).

37. In regards to claim 59, Maattaet and Hedayat as modified by Arita further teaches comprising an origin returning means for returning said ring-like magnet to the origin using magnetic force generated by said ring-like magnet (col. 9, lines 7-22 Maattaet).

38. In regards to claim 60, Maattaet and Hedayat discloses the limitations of a printed circuit board (fig. 4a (416) Maattaet), a switch on a side of said printed circuit board and at about the center of said ring-like magnet, and a projection for depressing said switch at a portion facing said switch (fig. 3a and 3b and col. 5, lines 40-67 Maattaet).

Maattaet and Hedayat differ from the claimed invention in that Maattaet and Hedayat do not disclose a resin layer

However, Arita teaches a system and method for using resin (fig. 19 (15) col. 7, lines 36-38 Arita)

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to modify Maattaet and Hedayat to include the use resin to provide a printed circuit board on which a resin layer with elastic deformation is provided, a switch on the resin layer side of said printed circuit board and at about the center of said ring-like magnet, and a projection for depressing said switch at a portion facing said switch on said resin layer as taught by Arita in order to give a better feeling, or more human feeling as stated in (col. 4, lines 50-60 of Arita).

39. In regards to claim 61, Maattaet and Hedayat as modified by Arita wherein said resin layer and said printed circuit board have their opposing faces not bonded to each other (fig. 19 (15) col. 7, lines 36-38 Arita).

40. In regards to claim 62, Maattaet and Hedayat as modified by Arita teaches wherein said resin layer is an elastic sheet (fig. 1 (11), col,. 4 lines 51-53 Arita).

41. Claim 63 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maattaet and Hedayat and Arita in view of Matsuda et. al (US 5,541,370) hereinafter, Matsuda.

42. In regards to claim 63, Maattaet, Hedayat and Arita differs from the claimed invention in that Maattaet, Hedayat and Arita does not disclose wherein said resin layer is a silicone resin.

However, Matsuda teaches a system and method for wherein said resin layer is a silicone resin. (col. 12, lines 10-17 of Matsuda).

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to modify Maattaet, Hedayat and Arita to include the use of silicone resin as taught by Matsuda, since silicone resin is a durable widely used and easily obtained resin.

43. Claim 55 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maattaet and Hedayat and Arita and further in view of Laube.

44. In regards to claim 55, Maattaet, Hedayat, Arita as modified by Laube teaches wherein said ring-like magnet is internally and externally magnetized and said magnetic sensors are faced to a magnetic pole of said ring-like magnet magnetized in a multipolar manner (fig. 3b and lines extending out Maattaet).

Maattaet, Hedayat, Arita fail to expressly disclose wherein in said ring-like is magnetized in a multipolar manner in the direction of its circumference, (fig. 3b and lines extending out Maattaet).

However, Laube teaches a system and method wherein in said ring-like is magnetized in a multipolar manner in the direction of its circumference (fig. 8 col. 8, lines 40-67 of Laube).

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to modify Maattaet, Hedayat and Arita to include the use of wherein in said ring-like is magnetized in a multipolar manner in the direction of its circumference as taught by Laube in order to provide a more substantial magnetic field as stated in (col. 2, lines 38-60 of Laube).

Allowable Subject Matter

45. Claims 68-70 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

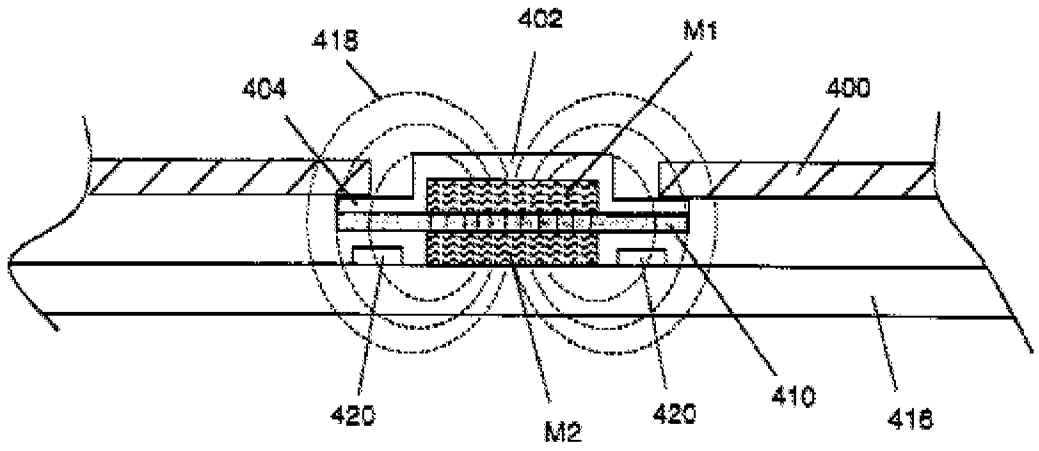
46. The following is a statement of reasons for the indication of allowable subject matter: Examiner notes in combination with the other elements from which claim 68 depends, the prior art of record fails to disclose, "ring sections of north magnetization are placed in an alternative manner with respect to inner ring sections of south magnetization along an inner circumference of said ring-like magnet.". Thus, claims 69-70 would also be allowed for the reasons stated above.

Response to Arguments

47. Applicant's arguments filed 5/22/2009 have been fully considered but they are not persuasive.

48. In response to applicant's argument, regarding claim 19, that the disc-like magnet of Laube is contrary to the teachings of Maataet and would fundamentally change the operation of Maataet, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Maataet teaches stacking two magnets on top of each other such that the north pole of magnet M1 faces the south pole of a second magnet M2, in order to maximize flux density between the two magnets. (fig. 4a and 4b and col. 5, lines 26-28).



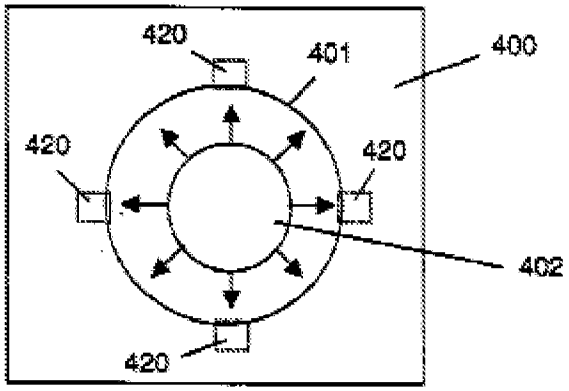
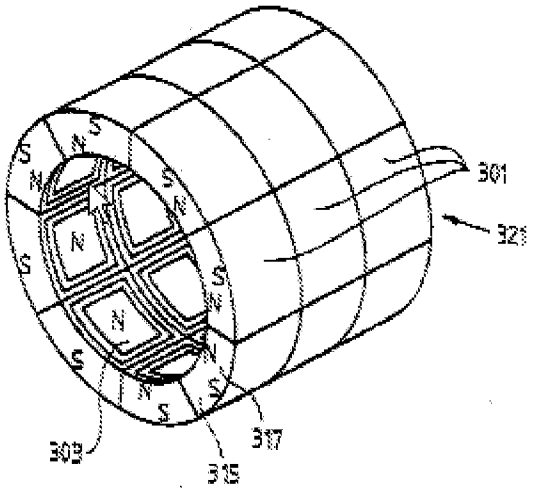


Figure 4b

Laube discloses in fig. 8 a disc-like ring with the part circular faces 303 having the inner radius of the ring define the north poles while the part-circular faces having the outer circular the ring define south poles. Examiner notes "Unipolar" is a term used to distinguish the other category of magnets that are usually "unidirectionally" applied to the body. The two magnetic poles are located on different sides of the magnet - the

south pole on one side and the north pole on the other. By having both poles on different sides, one may better exploit the basic laws of physics and assure a greater depth of penetration ... generally many times larger than bipolar magnets.

FIG. 8



Applicant contends that Maataet requires the use of two stackable magnets M1 and M2 and that by replacing Magnet M1 and M2 with the disc-like magnet of Laube would prevent the detection of the difference in the flux densities of two magnets and the modification would also prevent the disc-lie magnet from return to its centered position. Examiner respectfully disagrees.

As noted above, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or

all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. The prior art includes each element claimed, although not necessarily in a single reference. Each element would have performed same functions as it did separately and the result of the combination would have suggested predictable results. MPEP 2141. Providing a unipolar magnet in the sensor arrangement of Maataet would have suggested a substitution of known elements for another to obtain a predictable result to one of ordinary skill in the art. The greater depth of penetration of a unipolar magnet would allow for a reduction in size since a smaller magnet can be used and all the corresponding advantages that come with a reduction in component sizes.

Examiner also notes Applicant's discloser states, "[0039] [b]esides, the origin returning means of the ring-like magnet can be provided. Although fixing the ring-like magnet to the resin layer can make one of such origin returning means, a magnet other than the ring-like magnet can be added to construct a mechanism for returning to the origin by utilizing the attractive force or repulsive force between the two magnets."

49. In regards to Applicant's remarks with respect to claim 50, that Maattaet as modified by Laube does not teach or suggest magnetizing said ring-type magnet "at M sets of north-south poles, where M=K x I, K equal the number of magnetic sensors, and I is an integer equal to or great than one (pg 14, last). Examiner respectfully disagrees. Fig. 5b of Maattaet shows four sensors and Laube's fig. 8 structure. i.e. I is equal to one and the four sensors shown in fig. 5b on Maattaet, provides M is equal to four. Fig. 8 of

Laube provides at least four sets of north and south poles. The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See In re Keller, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

50. In regards to Applicant's remarks, with respect to claim 21, that Maattaet, Laube, and Arita do not teach or suggest a point device, "further comprising a printed circuit board on which a resin layer with elastic deformation is provided". Examiner respectfully disagrees. The claims language merely requires that a resin layer with elastic deformation be on a printed circuit board. Examiner asserts that as shown in Fig. 2 of Arita an elastic member (11) is provided on a printed circuit board. Examiner is interpreting "on" to mean above.

51. In regards to Applicant's remarks, with respect to claim 47, Maattaet, and Laube as modified by Arita do not teach wherein two magnetic sensors on the X axis are electrically connected at a first connection point and two magnetic sensors on the Y axis are electrically connected at a second connection point. Examiner respectfully disagrees. Col. 6, lines 1-15 discusses the Hall sensors and the measurement of change in the x-y plane. Examiner notes Arita was brought in to teach magneto-resistive sensors and their corresponding connections in fig. 9b wherein two magnetic sensors

on the X axis are electrically connected at a first connection point and two magnetic sensors on the Y axis are electrically connected at a second connection point.

52. In regards to Applicant's remarks, with respect to claim 51, Maattaet, and Laube as modified by Arita does not teach wherein a ring-ling magnet that is movable supported in a plane and is internally and externally magnetized along said ring in said plane. Examiner respectfully disagrees. Col. 6, lines 1-15. A magnet is internally and externally magnetized along said ring in said plane. This can also be seen in figs. 2a and 2b with the flux density 210 and 212. Applicant points to page 4 of the final Office Action. Wherein Examiner conceded that Maataet does not disclose said ring-like magnet comprises inner and outer ring sections comprising sections of north and south magnetization. Examiner points to the distinction between having "inner and outer ring sections comprising sections of north and south magnetization" and "is internally and externally magnetized."

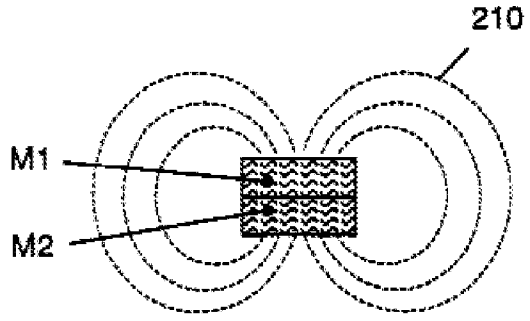


Figure 2a

Also, as Applicant points out, Maattaet explains:

> [a]s is shown in the figure, **permanent magnets** that are stacked such that the North Pole of a magnet I (M1) always faces the South Pole of an adjacent magnet 2 (M2) results in the magnets attracting each other and maximizes **the flux density**. (Emphasis added, column 5, lines 33-37).

Examiner notes Maattaet requires a magent. A magnet is a device that attracts iron and produces a magnetic field. A magnet exhibits these characteristics throughout both internally and externally.

In response to Applicant remarks that replacing Maataet's magnets M1 and M2 with a single magnet would prevent the detection of the differences in the flux densities of two magnets. However, Hedayat is being relied upon to teach the relationship between magnetic sensors and a central magnet.

53. In regards to claim 53, see the reasoning in claim 47.

54. Claim 60 is rejected for the same reasons stated in claim 21 above.

55. Claim 63 is rejected for the reasons stated in claim 21. Examiner notes that magnets are internally and externally magnetized.

56. Applicant's arguments with respect to claim 55 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GRANT D. SITTA whose telephone number is (571)270-1542. The examiner can normally be reached on M-F 9-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on 571-272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Sumati Lefkowitz/
Supervisory Patent Examiner, Art Unit 2629

/Grant D Sitta/
Examiner, Art Unit 2629
June 17, 2009